Successful treatment of extra-hepatic portal vein obstruction in pediatric native liver using interventional radiology

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Introduction Portal hypertension syndrome

- Extra-hepatic portal vein obstruction - one of the most frequent causes of PHT
- Treatment arsenal:
    - endoscopic;
    - surgical (portal reperfusion (*mesoRex bypass*)/ porto-systemic shunts)
- IR treatment:
    - angioplasty of stenosis,
    - desobstruction of thrombosis
    - TIPS
- The percutaneous reperfusion technique for portal cavernoma was described only in adults

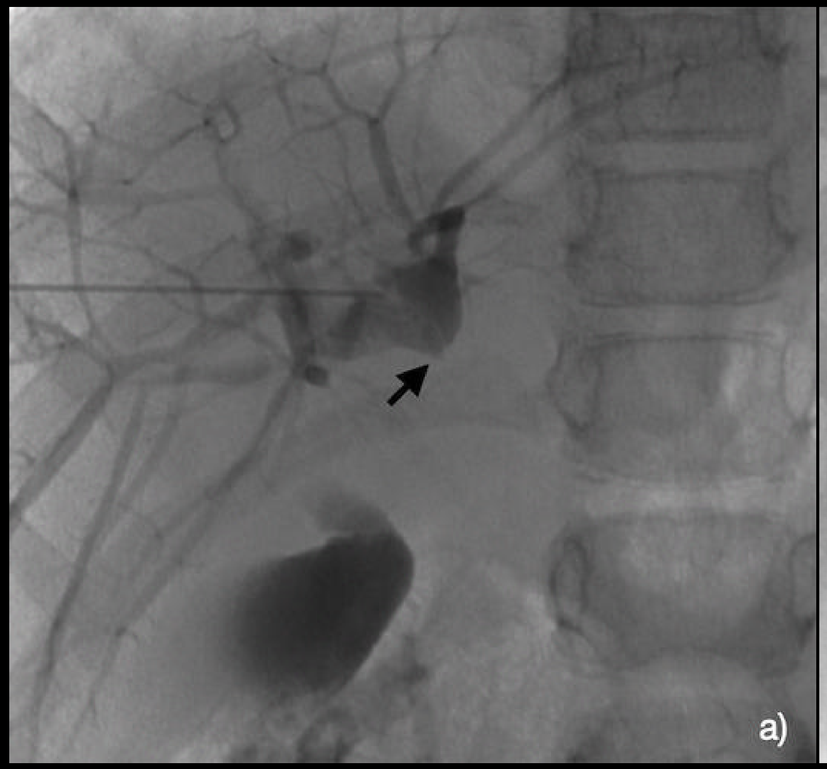
objectives

- To report 4 cases of endovascular treatment of portal cavernoma

FIRST CASE

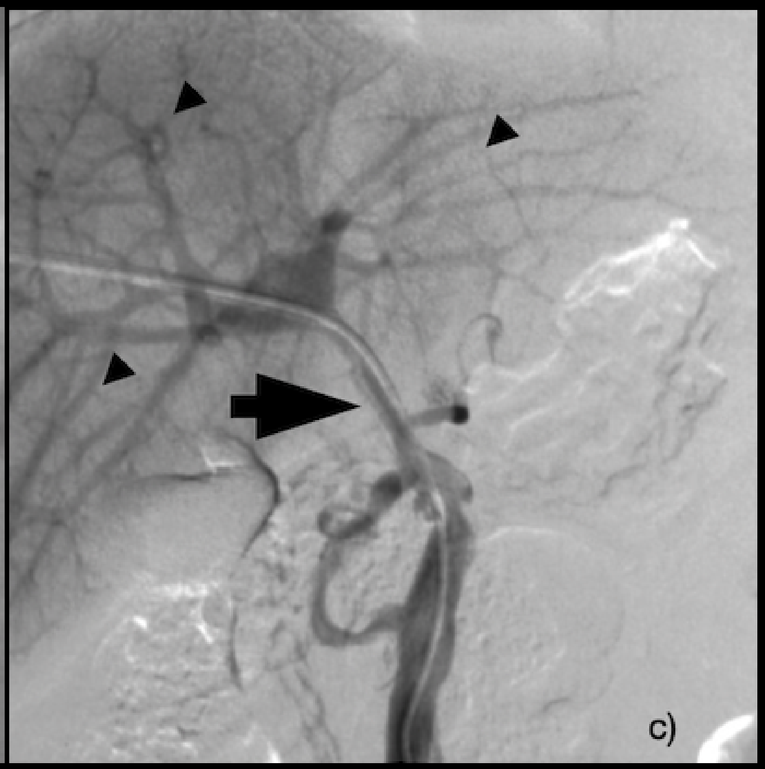
- 9 yo girl presenting splenomegaly and pancytopenia
- No history of upper or lower GI bleeding
- Presence of oesophageal varices grade III
- Ultrasound: portal cavernoma
- Indication of angiography planned to assess the feasibility of a surgical meso-rex bypass

Transhepatic portography



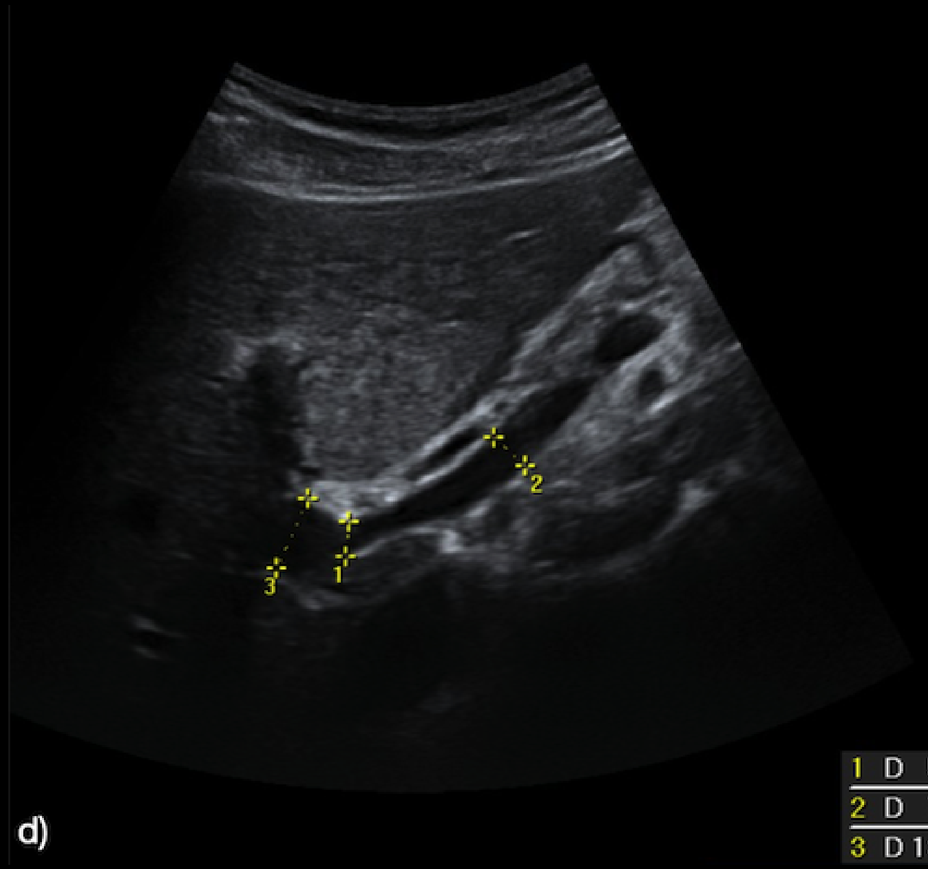
Very tight stenosis at the end part of the main portal vein not seen on conventional imaging

Successful passage through the tight stenosis



Resolution of PHT after dilatation
No recurrence of symptoms >20y

Ultrasound after 7 years



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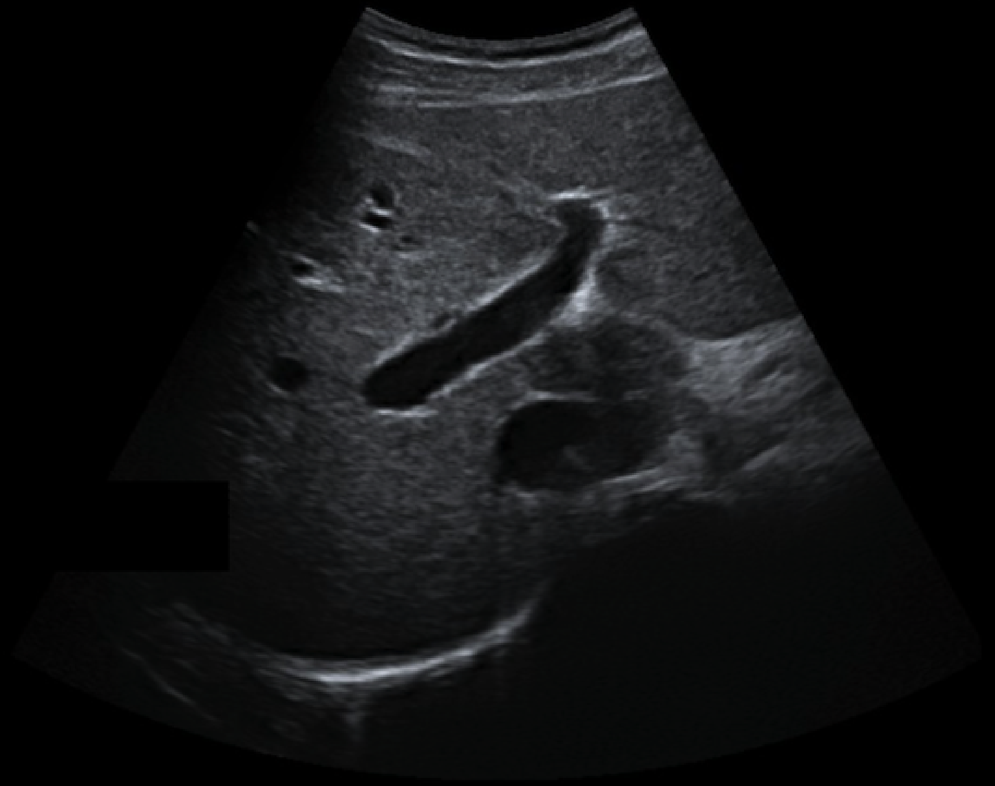

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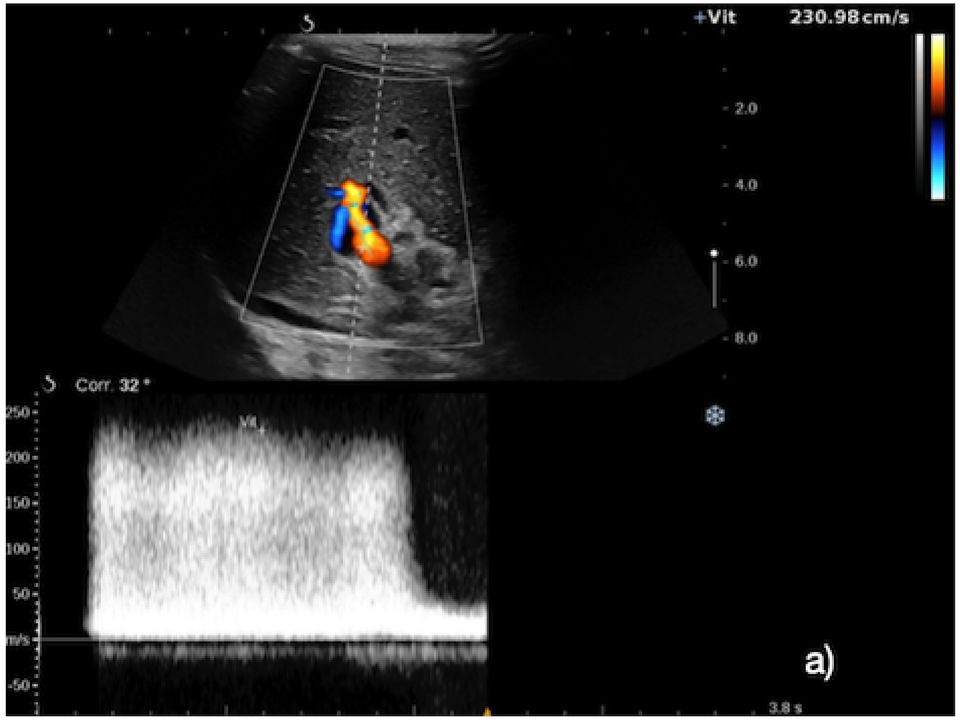
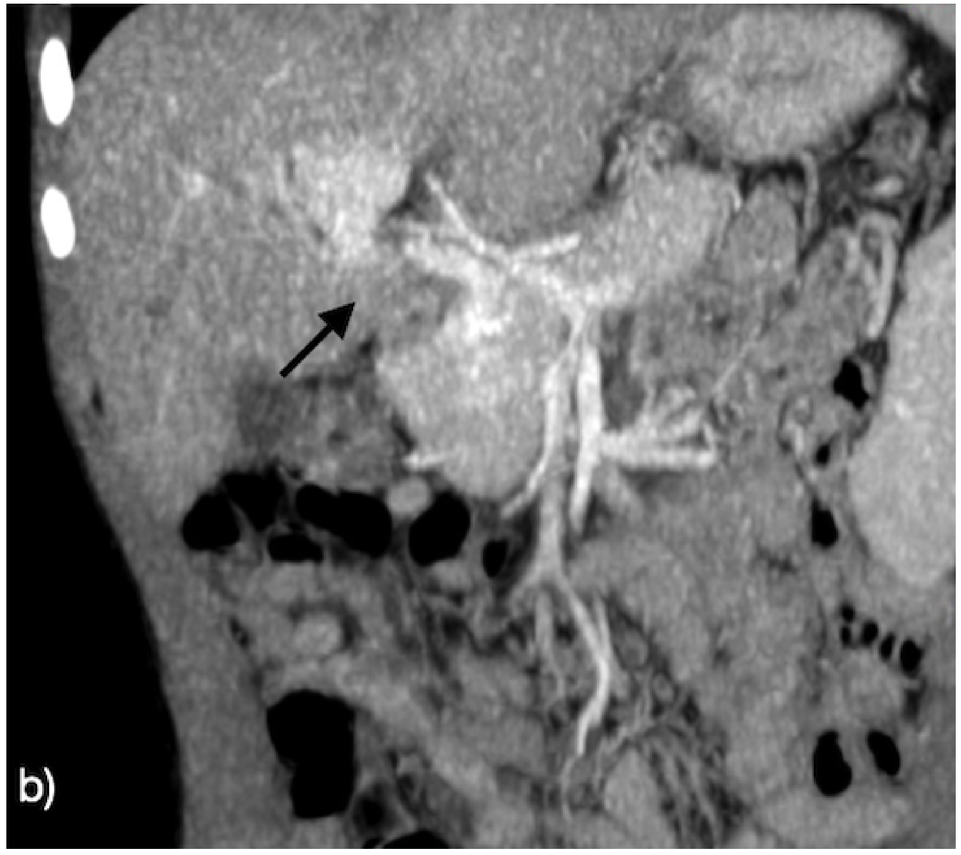
SECOND CASE

- 5 yo boy with splenomegaly and no history of upper or lower GI bleeding
- Presenting oesophageal varices grade II with failure of endoscopic treatment
- Ultrasound: portal cavernoma with tight stenosis between a vein of portal cavernoma and portal bifurcation
- Confirmed on CT scan

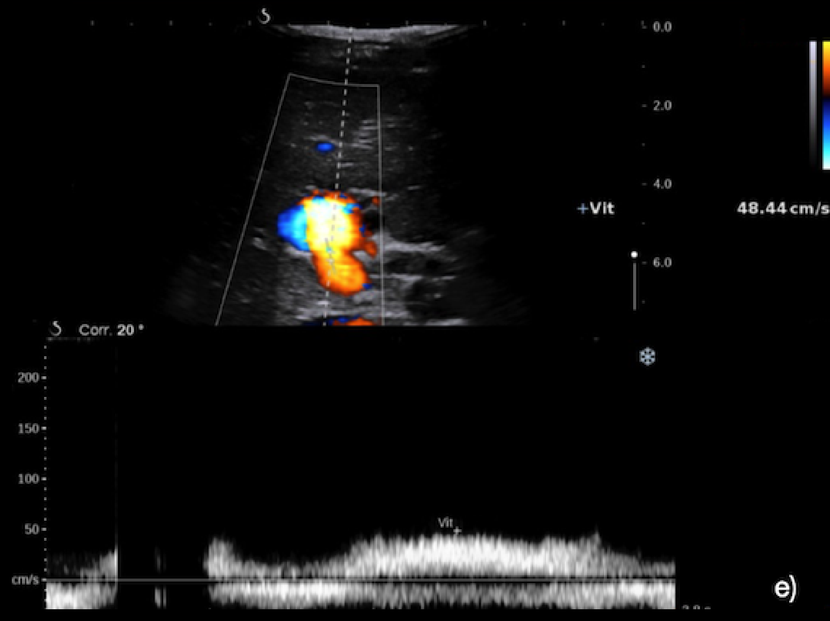


Spleen stiffness 100kPa



Successful passage of catheter through the tight stenosis

Transhepatic portography post-dilatation

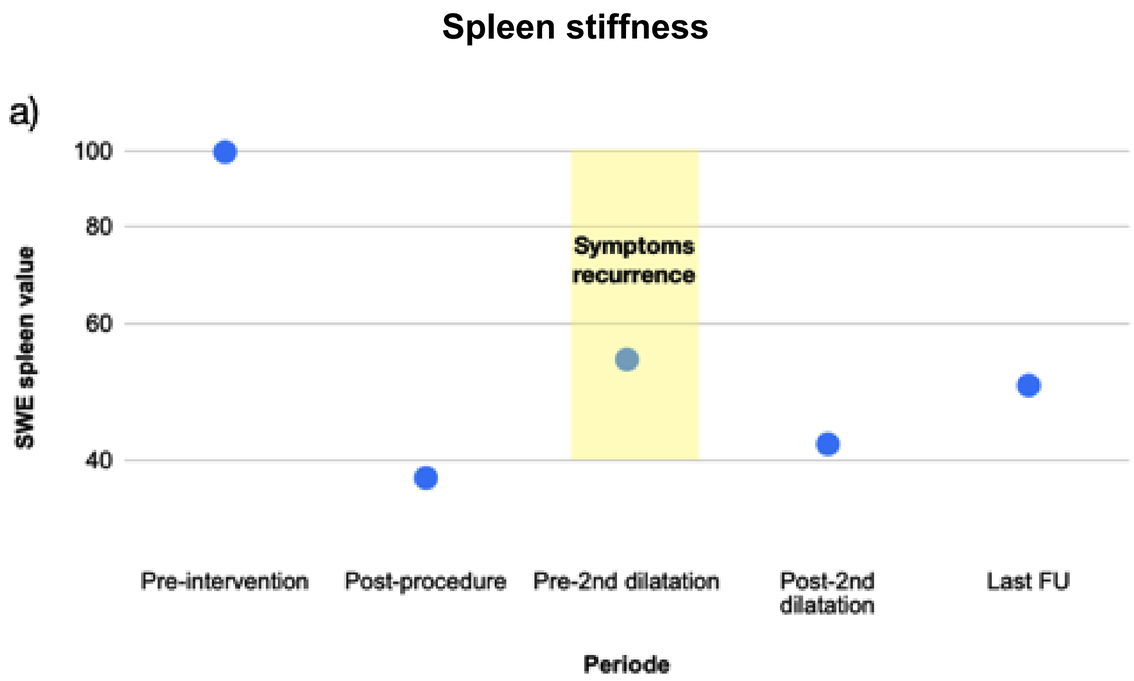


Ultrasound post-dilatation

tric radiology Department, APHP

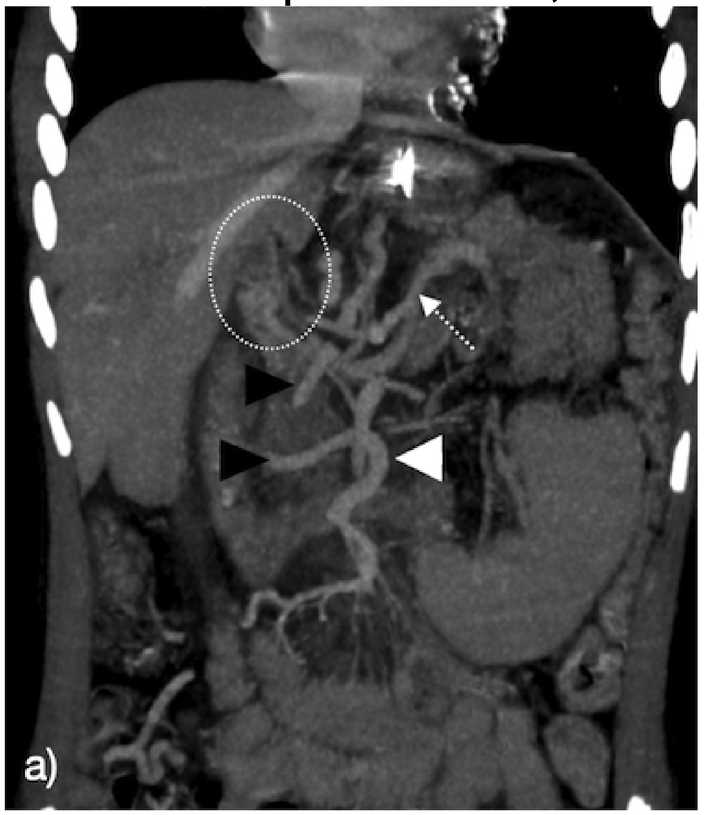
Evolution

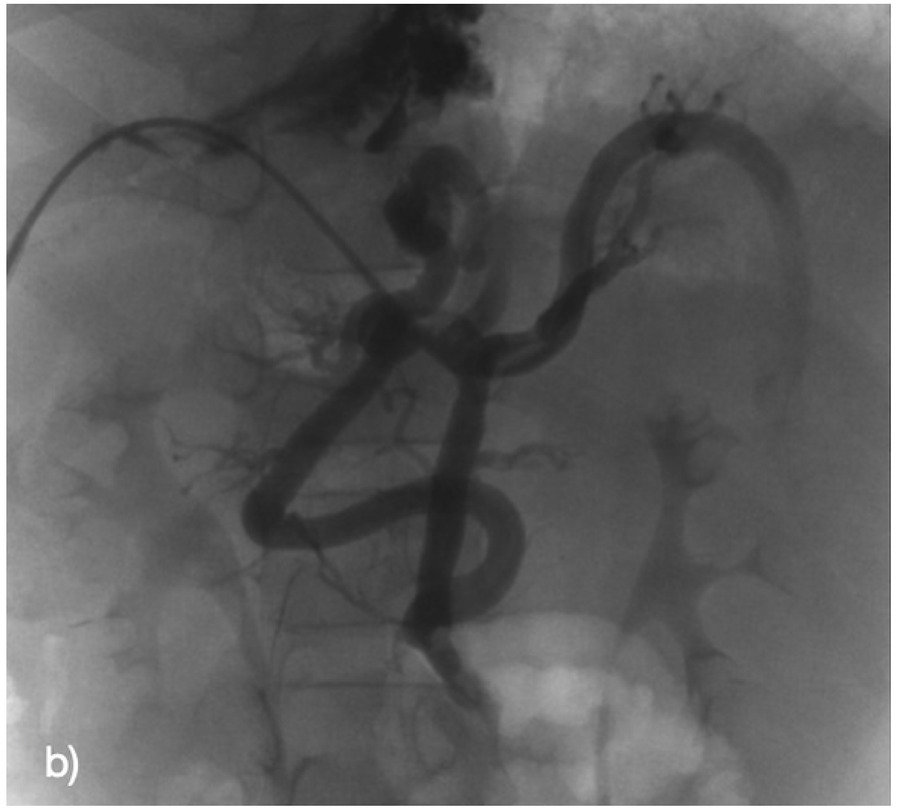
- Amelioration of the symptoms
- Recurrence after 6 mo
- Complete resolution of the symptoms on 2 years follow-up

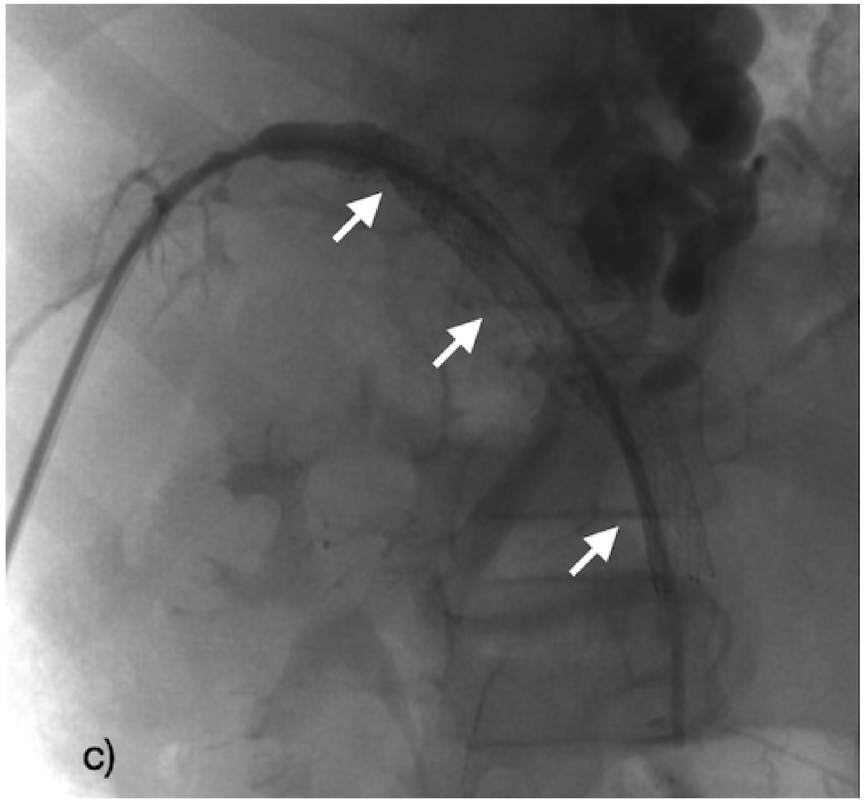


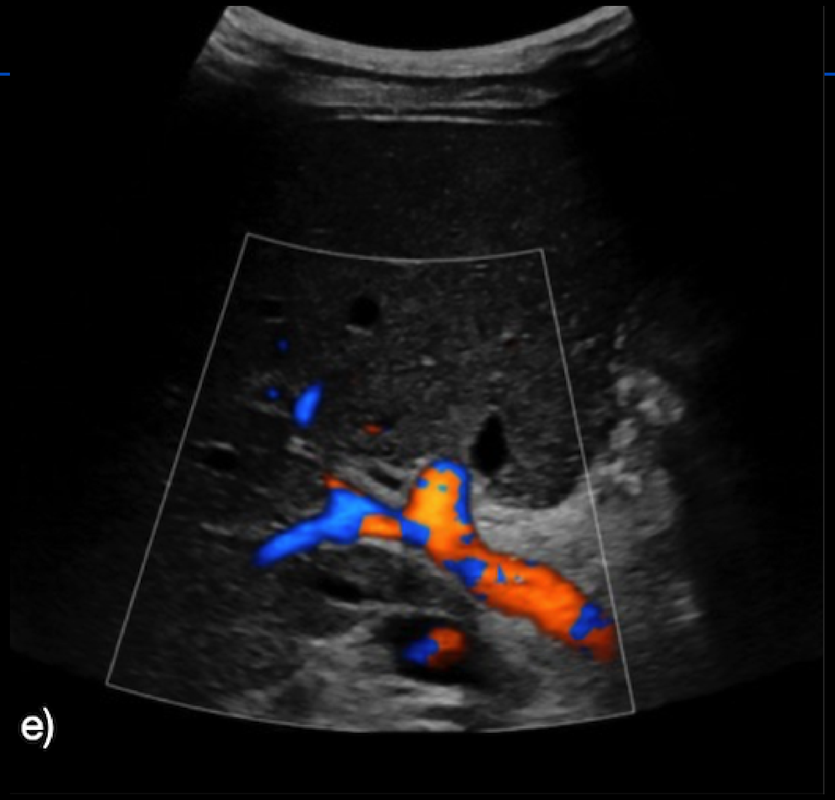
THIRD CASE

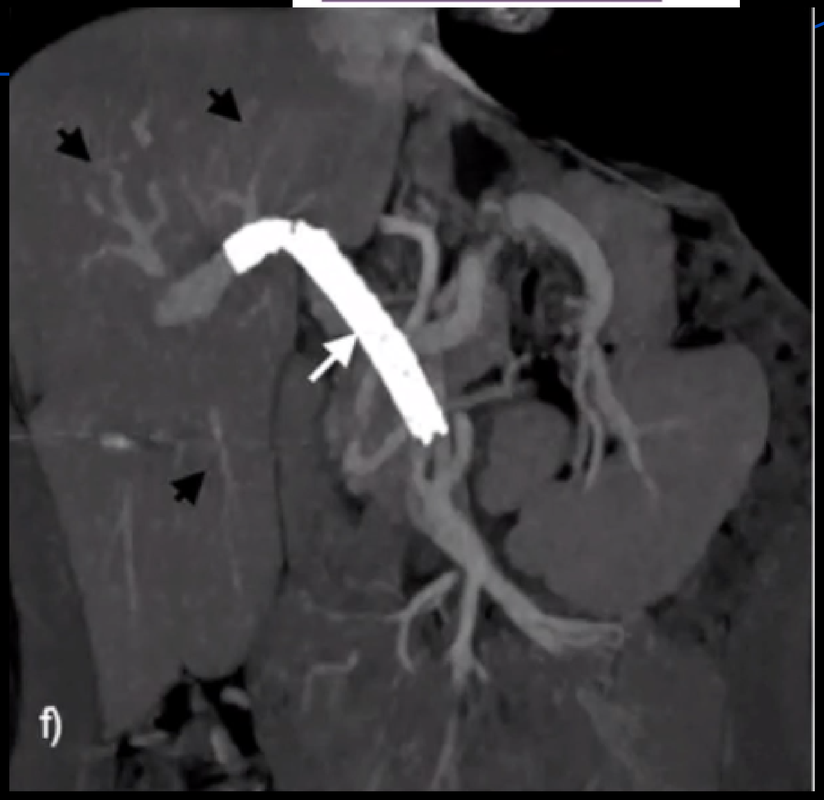
- 8 yo boy with recurrent GI bleeding from oesophageal varicoses grade I and II
- Failure of endoscopic and surgical treatment
- Right intra-hepatic portal veins are visible
- Patent splenic vein, mesenteric veins, and confluence









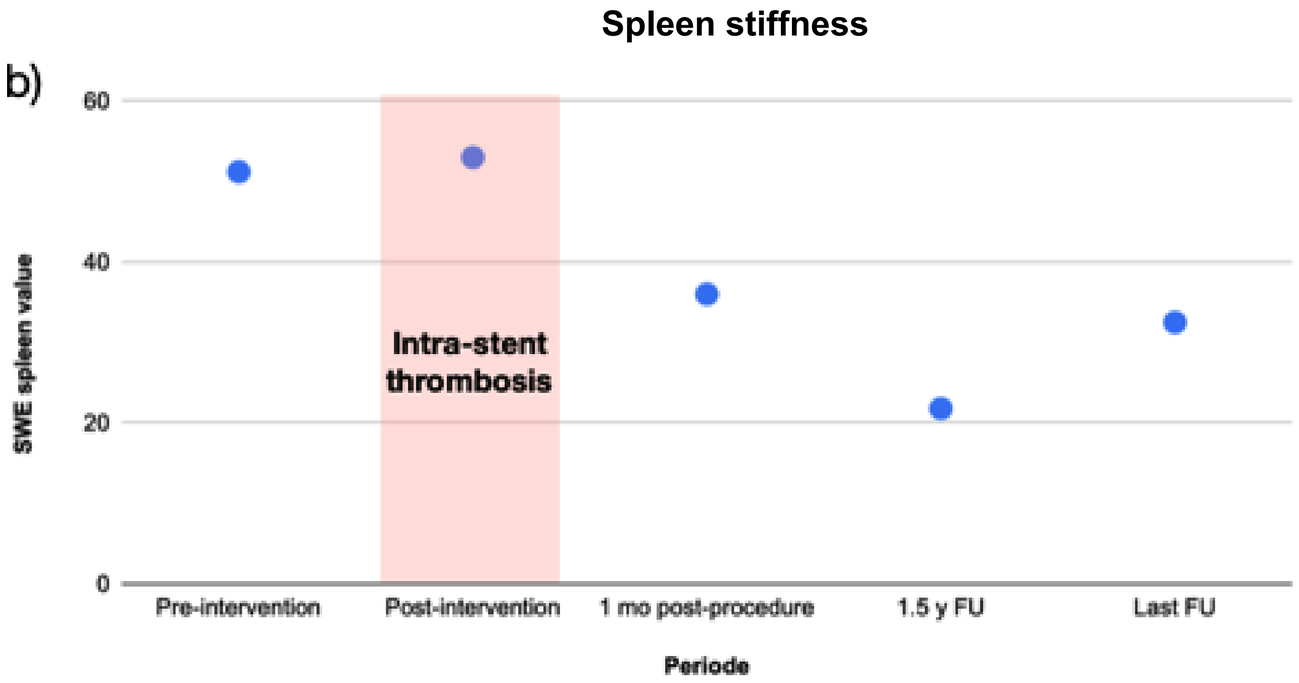


Initial post-procedure
intra-stent thrombosis

Permeable stent with intra-hepatic portal flow

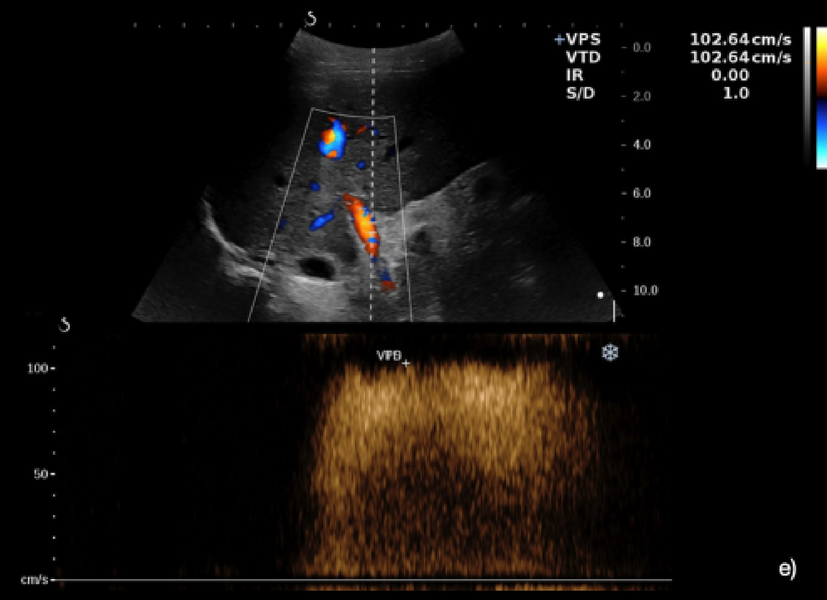
Evolution

- Initial thrombosis of stents. Anticoagulation treatment - secondary success
- No recurrence on 2y follow-up



FORTH CASE

- 10 yo boy presenting with recurrent GI bleeding from oesophageal varicose veins grade II and cardial varices
- Failure of endoscopic and surgical treatment

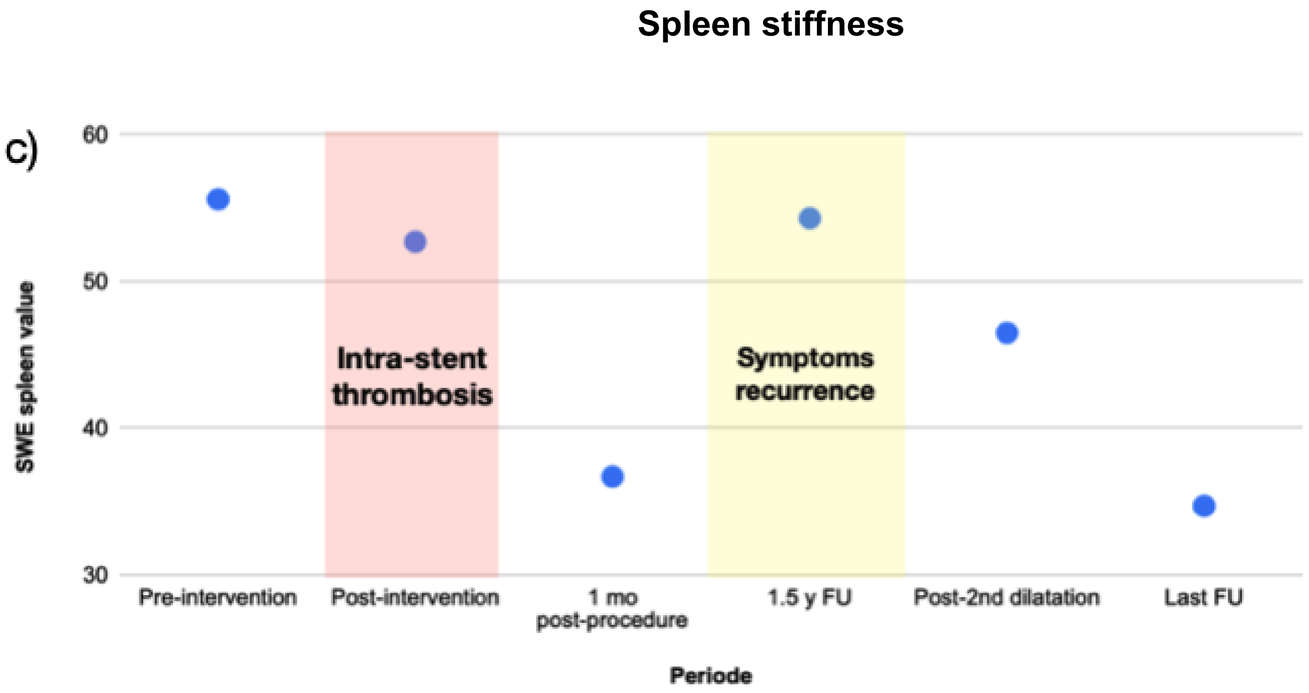


Patent overlapping stents

Intra-hepatic portal flow after dilatation and deployment of the stents

Evolution

- Initial thrombosis of stents. Anticoagulation - secondary succes
- 1.5 y follow-up he presented recurrent GI bleeding secondary to a stenosis post-stent
- Resolution of symptomatology on 9 mo follow-up



Discussion & Conclusion

- Successful endovascular portal reperfusion in patients with EHPVO:
  - creating a new vascular channel
  - Dilatation of stenosis on the native portal vein or between the cavernoma and the portal system

- Requisites: permeable intra-hepatic and extra-hepatic portal system for technical success

- Initial intra-stent thrombosis does not preclude secondary success- 1 mo anticoagulation with fully permeable stents

- Spleen shear-wave elastography is related to splenic venous congestion and allows to assess the success of the procedure and depict recurrence of PHT in case of stenosis or obstruction

Thank you!

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